

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**SECOND SEMESTER B.TECH DEGREE EXAMINATION, JULY-2017**

**Course Code: CS100**

**Course Name: COMPUTER PROGRAMMING (CS, IT)**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all Questions.*

- 1 What is a variable? How are the variables declared in C? (2)
- 2 How does  $x++$  differ from  $++x$ ? Explain with suitable examples. (3)
- 3 Give the declaration of variable for storing the string "PROGRAMMING" in C. (2)
- 4 What is the purpose of a switch statement? (2)
- 5 Give the differences between while and do-while statement (3)
- 6 What are formal arguments and actual arguments in a function? (2)
- 7 What are function prototypes? Why do we use function prototypes? (3)
- 8 How is an array name interpreted when it is passed to a function? (2)
- 9 How do you declare a pointer variable? What is the significance of the datatype included in the declaration? (3)
- 10 How do you interpret the following function declaration? `int *p(char a[])` (2)
- 11 What is the purpose of typedef feature? (2)
- 12 What is union? How does it differ from a structure? (3)
- 13 What do you mean by opening of a file? How is this accomplished? (3)
- 14 What are enumeration constants? How ordinal values are assigned to them? (3)
- 15 Discuss the different parameters that are passed to main function as command line arguments. (3)
- 16 Explain register storage class with the help of an example. (2)

**PART B**

*Answer any four questions. Each carries 8 marks.*

- 17 a) Write a C program to test whether a given number is palindrome or not. (5)
- b) Discuss the differences between break and continue statements in C. (3)
- 18 a) Write a C program to find the largest and smallest numbers and their locations in an array of n numbers. (5)
- b) Explain recursion with the help of an example. (3)
- 19 a) Write a C program to sort a set of numbers using bubble sort. (6)
- b) Discuss any four bit level operators with suitable examples. (2)
- 20 a) Write a C program to find the transpose of a matrix. (6)
- b) How can you access structure members using a pointer to structure variable? (2)
- 21 a) Write a C program to concatenate two strings without using any standard library function. (6)
- b) What is the use of an indirection operator? (2)

**PART C**

*Answer any two questions. Each carries 14 marks.*

- 22 a) Write a function to perform binary search on a set of sorted numbers. Write a complete C program which accepts a sorted array of N numbers and invokes the function to check for the presence of a particular key element in the array. (10)
- b) Compare formatted files and unformatted files (4)
- 23 a) Write a program to count the number of vowels, consonants, digits and special characters in a text file. (10)
- b) Discuss the different parameter passing techniques. (4)
- 24 a) A library database maintains following information about books:- book\_id, name, author, no\_of\_copies. Write a program to sort the books based on the decreasing order of number of copies available. (10)
- b) What are array of pointers? How do you declare an array of pointers? (4)

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